

Remarks

Claims 2-3, 5-6, 8, and 11-21 were rejected as unpatentable over AAMODT et al. 2003/0194604 and claim 7 was rejected further in view of YAMASHITA 6,287,720. Claim 21 has been amended to include the subject matter of claim 8, which has been canceled. Reconsideration and withdrawal of the rejections are respectfully requested.

The Official Action notes that AAMODT et al. do not disclose the storage battery of claim 8 (now in claim 21) but opines that one of skill in the art would find it obvious to connect a plurality of the AAMODT et al. batteries. However, the AAMODT et al. batteries are for an implantable medical device. It would not be feasible to connect a plurality of these batteries together and retain the intended purpose of the implantable battery in AAMODT et al. The reference states (paragraph 0002) that the battery must be able to supply energy from a minimum packaged volume. Combining a plurality of these batteries would defeat this requirement. Accordingly, claim 21 avoids the rejections under §103.

The dependent claims are allowable for these and further reasons.

New claim 22 has been added and allowance of the new claim is respectfully requested. In lithium-ion secondary batteries, the range of output voltage is limited, for example from 3.0 to 4.2 volts. When the output voltage becomes lower than the lower

limit or higher than the higher limit, the reactive material in the secondary battery deteriorates, and the battery's life is shortened. In a storage battery that connects two or more of such secondary batteries in series, each of the secondary batteries has a different capacity due to production variability. Therefore, the secondary battery having the least capacity is the first to reach the upper voltage limit when the storage battery is charged and the secondary battery having the least capacity is the first to reach the lower voltage limit when the battery is discharged. The cell-balancer circuit detects a secondary battery that deviates from the voltage limits and balances the output voltage of each secondary battery to electrically charge or discharge the secondary battery by using the third terminal. When the secondary battery cannot accurately measure the output voltage, this causes early performance deterioration in the secondary battery, which causes deteriorated performance of the storage battery. This cell balancer is not seen in the reference. Accordingly, this claim further avoids the rejection.

In view of the present amendment and the foregoing remarks, it is believed that the present application has been placed in condition for allowance. Reconsideration and allowance are respectfully requested.

The Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment

to Deposit Account No. 25-0120 for any additional fees required
under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17.

Respectfully submitted,

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